

The Kienzle Home in Whittier

SUPERVISORIAL DISTRICT 4 RESIDENT

What It Cost

Many homeowners begin with a 20% energy savings target.

The Kienzles' upgrade included:



Cost-effective upgrades projected to achieve at least **25% energy savings** in this home

| | |
|--|----------------|
| Energy assessment | \$250 |
| Attic and wall insulation upgrade with air sealing | \$6,030 |
| Shower valves | \$100 |
| Subtotal investment | \$6,380 |

Qualified Energy Upgrade California incentives **\$5,000***

Subtotal #1 out-of-pocket costs **\$1,380**

But the Kienzles went a step further.



Additional upgrades projected to achieve over **40% energy savings** in this home

| | |
|--|-----------------|
| Lennox heating and A/C system with duct enhancements | \$12,110 |
| Pool pump upgrade | \$1,600 |
| Weather stripping | \$100 |
| Subtotal additional investment | \$13,810 |

Additional Energy Upgrade California incentives **\$3,000***

Subtotal #2 out-of-pocket costs **\$10,810**

Subtotal #1 out-of-pocket costs **\$1,380**

Total out-of-pocket costs **\$12,190**

* Check EnergyUpgradeCA.org/LACounty for current promotion.



Stephen and Colleen Kienzle and their three teenage sons live in a 2,400 sq ft ranch-style home built in 1957. Mr. and Mrs. Kienzle enjoy entertaining friends and neighbors by showing outdoor movies and lounging by the pool. They knew their utility bills were higher than their

neighbors'—the Kienzles spend about \$6,800 annually for electricity and gas—but they couldn't figure out why. The Kienzles' sons also suffer from respiratory problems, making indoor air quality a particular concern. Through Energy Upgrade California, the Kienzles found out that about 50% of their home's heated and cooled air was leaking through unsealed and uninsulated openings!



Energy Upgrade California
Home Energy Makeover

1. Comprehensive Energy Assessment

SoCal Remodeling conducted a comprehensive home energy assessment using diagnostic equipment that included a blower door. They determined the home's ventilation was very leaky and needed insulation. **SoCal Remodeling** also discovered that one burner was not firing in the home's furnace and was causing unsafe health conditions.

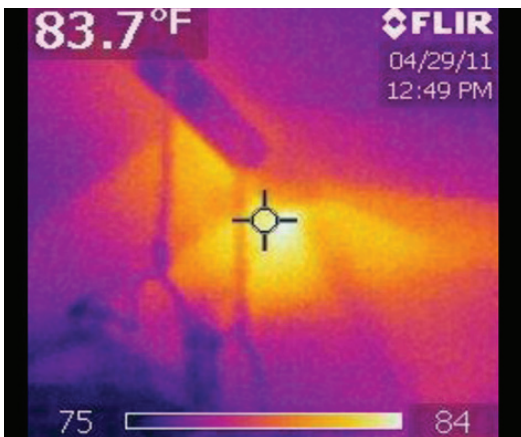
2. Insulation with Air Sealing

SoCal Remodeling installed insulation with air sealing in the attic and walls. They replaced 22 ceiling lights with sealed and energy efficiency rated units, and made sure all penetrations between the attic floor and living area ceiling were sealed before blowing in cellulose insulation donated by **GreenFiber**. The new insulation is at an R-38 energy efficiency level to comply with modern building energy codes. At the attic entrance, they constructed an

The Kienzle Home in Whittier *(continued)*



The Kienzles' home in Whittier



Corner of sloped ceiling in kitchen showing poorly insulated attic area allowing excessive heat transfer into the home



Crawl space without floor insulation or sealing

insulated attic hatch. They then drilled inconspicuous holes into the walls to pump cellulose insulation donated by **GreenFiber** into the wall cavities up to an R-13 efficiency level. These combined measures reduced the air exchange rate in the home.

3. Heating and Cooling System

Lennox Industries provided a new heating and cooling system which included an energy-efficient natural gas furnace and central air conditioning system.

Associated Heating and Air of Anaheim removed the home's existing 30-year-old furnace from a central closet and relocated the new heating system in the attic. This upgrade provided the Kienzles with the unexpected benefit of a new closet.

Leaks, holes and poorly connected ducts were losing over 20% of the air moving through the old heat pump's duct system. This was creating higher energy costs and decreasing comfort. **SoCal Remodeling** removed the old duct system, and redesigned and installed a new air-balanced ducting system that included increased air supply return and air supply venting. The new ductwork was insulated to an R-8 efficiency level, sealed to 95% efficiency, and then buried within the attic's new insulation.

Building Doctors installed a programmable, touch-screen thermostat donated by Lennox, which ensures that the system operates at peak efficiency and can be adjusted to a pre-set schedule. Now the system runs less when the occupants are asleep or away from home.

4. Health and Safety

SoCal Remodeling replaced the home's emergency gas shut-off valve because it had rusted shut.



GreenPoint Rated Elements label improvements

| | |
|--|----------------|
| GreenPoint rating and processing | \$1,600 |
| High-efficiency toilets | \$1,000 |
| Plumbing labor | \$1,000 |
| CO alarms | \$50 |
| Subtotal additional investment | \$3,650 |
| GreenPoint Rated Elements label rebate and LA bonus | \$900* |
| Total additional out-of-pocket | \$2,750 |



GreenPoint Rated Improvements

Since the Kienzle family was already making a lot of energy improvements as part of Energy Upgrade California, they didn't have to make many additional improvements to achieve the GreenPoint Rated Elements label. **Energy Efficiency Management, Inc.** helped the Kienzles earn 30 points—well above the minimum 25 points required for the label.

GreenPoint Rating for the Kienzle home was provided by **Energy Efficiency Management**.

Energy Efficiency—18 points

All energy points were achieved through the Energy Upgrade California Advanced Upgrade Package.

Water Efficiency—5 points

Energy Efficiency Management suggested several water conserving measures that would help the Kienzles save more money on their utility bills. Following these suggestions, **SoCal Remodeling** upgraded the two 1.6 gallon-per-flush (GPF) toilets with .94 GPF Sydney Smart Dual Flush Wash toilets donated by **Caroma**. These will provide a savings of 40%—well beyond the 1.28 GPF toilets now mandated in California.

SoCal Remodeling also installed a shower control valve. This valve turns flow off automatically once the desired temperature is achieved and holds it until water is actually needed.

The Kienzles earned additional water efficiency points because they already had a high-efficiency irrigation system.

Indoor Air Quality—3 points

The air and duct sealing completed as part of the energy efficiency upgrades vastly improved the indoor air quality in the Kienzles' home. The home also received a new UL 2034 carbon monoxide monitor to comply with new code effective in California as of July 1, 2011.

Energy Efficiency Management helped the Kienzles earn extra indoor air quality points by making sure all newly installed insulation was low-emitting, and by sealing off construction areas to protect the undisturbed parts of the home from dust and debris.

Resource Efficiency—2 points

Energy Efficiency Management made sure to recycle all cardboard, concrete and metal waste created during the upgrade. This is a required part of the GreenPoint Rated process and saves a lot of waste from ending up in our landfills.



Poorly insulated and air-sealed, rigid ductwork



Blown-in cellulose attic insulation, well below today's standards

The Kienzle Home in Whittier (continued)



Value Conclusion

| | |
|---------------------------------------|-----------|
| Pre-upgrade | \$730,000 |
| Post-upgrade | \$765,000 |
| Value contribution of energy upgrades | 5% |

Better Communities—2 points

The residence received points for green practices already in place that help create healthier, safer communities. These include being in walking distance of public transit and other important neighborhood services, which reduces car travel and creates a more vibrant community.

GreenPoint Rated Improvements

The GreenPoint Rated label is the mark of quality for green home upgrades. It verifies that your home upgrade was installed according to proven green standards, and can even improve your property value at time of sale. When you participate in GreenPoint Rated, you earn points for improvements that save energy, water, resources and indoor air quality.

Learn about GreenPoint Rated Improvements at GreenPointRated.com.

About Energy Upgrade California in Los Angeles County

Energy Upgrade California in Los Angeles County is a rebate and incentive program for homeowners to improve their homes' energy efficiency, save water and natural resources, lower utility bills, and create a healthier and more comfortable home through a home energy upgrade. Energy Upgrade California connects homeowners with local Participating Contractors who can complete their home energy upgrade and help them apply for rebates and incentives. Learn more at EnergyUpgradeCA.org/LACounty or call 1-877-785-2237.

MAKEOVER TEAM

CONTEST HOST AND ADMINISTRATOR
Los Angeles County Team

PARTICIPATING UTILITIES
Southern California Edison
Southern California Gas Company
City of Whittier Water Agency

OVERALL MAKEOVER WORK SCOPE COORDINATION PROVIDED BY:
SoCal Remodeling,
www.socalremodeling.com

COMPREHENSIVE HOME ENERGY ANALYSIS PROVIDED BY:
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